

275375

USCG-2004-16860-19

-----Original Message-----

From: Lawrence.Rob@epamail.epa.gov
[mailto:Lawrence.Rob@epamail.epa.gov]
Sent: Monday, November 17, 2003 11:52 AM
To: Reese, David; Prescott, Mark CDR; Esposito, Frank
Cc: Rankin.Patrick@epamail.epa.gov; Boydston.Michael@epamail.epa.gov;
Braganza.Bonnie@epamail.epa.gov; Chen.Isaac@epamail.epa.gov;
Wilson.Js@epamail.epa.gov
Subject: Shell Gulf Landing DPA application

We have reviewed the NPDES and CAA permit applications and determined that the applications are complete. They have submitted all the required EPA forms and certifications.

But, as usual, we reserve the right for additional information when we develop the permits.

Please notify us of the start of the 356 day timeline and outside dates for items such as the public hearing, EPA negative notice deadline, ROD, etc.

Rob Lawrence
Senior Policy Advisor - Energy Issues

214.665.6580
214.665.7263 (FAX)

-----Original Message-----

From: Kelly Shotts [mailto:Kelly.Shotts@noaa.gov]
Sent: Friday, November 14, 2003 4:48 PM
To: Prescott, Mark CDR
Cc: Richard Hartman; Rickey Ruebsamen; mark.thompson@noaa.gov; Rusty Swafford; Kay Davy; miles.croom@noaa.gov
Subject: Shell Gulf Landing deepwater LNG application

Mark:

NOAA Fisheries' Habitat Conservation Division has reviewed the deepwater port application for Shell Gulf Landing LNG. The proposed LNG terminal would be located approximately 35 miles south of Cameron Parish, Louisiana. The purpose of our review was to determine whether the level of information provided in the application is adequate for our evaluation of the impacts to essential fish habitat (EFH) and marine fishery species, and to make a recommendation to the Coast Guard and MARAD about whether the application should be deemed complete. Comments provided at this time are not intended to imply NOAA Fisheries' agreement or disagreement with the details and substance of the application, or to indicate our future position on whether we believe the project should be authorized.

We generally found the application to be well-written and contain an excellent qualitative analysis of the project. We applaud the applicant's efforts in describing the development of alternatives and fully disclosing the decision-making process involved in selecting measures to avoid and minimize adverse environmental impacts. The applicant has proposed to implement measures to minimize impacts to marine fishery species from entrainment, such as locating the regasification system's seawater intakes in the lower third of the water column and maintaining a 0.5 foot per second intake velocity.

While design and operation features for minimizing impacts to marine fishery species have been proposed for the Shell Gulf Landing deepwater LNG terminal, NOAA Fisheries is concerned that the level of impacts from entrainment were not quantified in the application. While entrainment data from Shaw et al (2002) provides valuable information about general levels of larval entrainment at oil and gas platforms, depth-specific

ichthyoplankton data (including egg densities) for the project area were not included in the application. NOAA Fisheries is becoming increasingly concerned about the potential for cumulative impacts from LNG facilities in the Gulf of Mexico. We are aware of 3 other LNG projects being planned for construction either in or offshore of Cameron Parish. In addition, there are multiple LNG projects being proposed or planned in varying degrees of proximity to the east and west of this project. Because of the increasing number of LNG proposals and the uncertainty in the degree of impacts to EFH and marine fishery species from these projects, NOAA Fisheries feels it is critical to quantify the entrainment mortality of eggs and larvae of marine fishery species as accurately as possible. Therefore, NOAA Fisheries recommends the Coast Guard and MARAD deem the application for Shell Gulf Landing LNG incomplete until the applicant has provided depth-specific data on the densities of fish eggs and larvae at the project site.

Additional impacts to EFH and marine fishery species could occur from dredging or filling of wetlands associated with construction of the onshore base. Tidally influenced wetlands in Louisiana have been designated as EFH for postlarval, juvenile, and subadult life stages of white shrimp, brown shrimp, and red drum. In addition, these wetlands provide nursery and foraging habitats supportive of a variety of economically important marine fishery species which serve as prey for Federally managed species. These wetlands also produce nutrients and detritus, important components of the aquatic food web, which contribute to the overall productivity of nearby estuaries and the nearshore Gulf of Mexico. Because the application does not provide the exact location of the onshore base, or the dredging and filling activities that would be necessary, the impacts to EFH and marine fishery species cannot be determined from the application. Furthermore, both NEPA and the Deepwater Port Act require that the proposed project and its associated impacts be evaluated as a whole. Therefore, NOAA Fisheries recommends the Coast Guard and MARAD deem the application for Shell Gulf Landing LNG incomplete until the applicant has provided the location(s) being considered for the onshore base and any potential impacts associated with construction and operation.

NOAA Fisheries appreciates the opportunity to review the application for the Shell Gulf Landing deepwater LNG. We look forward to continued coordination with the Coast Guard and MARAD. Feel free to contact me if you need further clarification or have questions regarding our comments.

Thank you,
Kelly

-----Original Message-----

From: David.Moore@mms.gov [mailto:David.Moore@mms.gov]

Sent: Monday, November 17, 2003 6:14 PM

To: Prescott, Mark CDR; Reese, David; Corbin, Robert

Cc: Elmer.Danenberger@mms.gov; Gregory.Gould@mms.gov; Radford.Schantz@mms.gov; James.F.Bennett@mms.gov; Maureen.Bornholdt@mms.gov; Renee.Orr@mms.gov; Timothy.Redding@mms.gov; Chris.Oynes@mms.gov; Charles.Schoennagel@mms.gov; Donald.Howard@mms.gov; Alex.Alvarado@mms.gov; Timothy.Lanigan@mms.gov; Hammond.Eve@mms.gov; Dennis.Chew@mms.gov; Clay.Pillie@mms.gov; Donald.Hill@mms.gov; Darryl.Francois@mms.gov; Ann.Wiggin@mms.gov

Subject: Gulf Landing Deepwater Port Completeness Review

Importance: High

Regional and Headquarters staff of the Minerals Management Service (MMS) have reviewed the application submitted by Gulf Landing, LLC, for a liquefied natural gas deepwater port which would be located in the Outer Continental Shelf in West Cameron Block 213.

Due to the absence of a number of items that preclude a full analysis of environmental and operational impacts, it is the recommendation of MMS that the application be deemed "incomplete" pending receipt of the requested information. The primary deficiency is associated with coastal zone consistency and onshore construction sites and support facilities, while no less important is the lack of information on impacts to offshore energy infrastructure, oil and gas exploration, development and production activities, and overall safety in the OCS due to increased vessel traffic in and around the port. The attachments provide detailed comments on our agency's completeness reviews that support our finding. Consultation was also conducted with Research and Special Programs Administration staff regarding pipeline information, with correspondence attached. Please note that as MMS pursues a more detailed analysis of the proposed port, requests for additional information may be forthcoming.

MMS appreciates the opportunity to provide comments on the subject application and remain committed to assisting the Coast Guard and the Maritime Administration in expeditious review of deepwater port applications. Should you have any questions, please feel free to call.

Thank You,

David M. Moore
Agency Liaison to the Coast Guard
703-787-1637

-----Original Message-----

From: Herrick, LE [mailto:Le.Herrick@rspa.dot.gov]
Sent: Monday, November 17, 2003 3:47 PM
To: Alvarado, Alex; Lanigan, Timothy
Cc: 'le,herrick@rspa.dot.gov'; herrick@RSPA.dot.gov
Subject: Gulf LAnding DWPA Application

Alex:

The Office of Pipeline Safety has made a preliminary review of the supplied materials dated October 2003 relating to the Gulf Landing Deepwater Port License Application for a proposed Offshore Liquefied Natural Gas Terminal in the Gulf of Mexico. It is our understanding that MMS is performing a completeness review of this document in accordance with the Cooperating Agreement between the USCG and MMS.

Gulf landing proposes to construct, own and operate up to five takeaway pipelines that will interconnect with the existing natural gas pipelines located in the gulf of Mexico. Gulf Landing has requested the ability to modify or supplement the information supplied in the original application in the event it is necessary to do so without impeding the application timeline.

Therefore, we concur with the MMS on the initial completeness of the application and reserve the ability to request and receive additional or modified design criteria and design standards for the Gulf Landing DWP pipelines in order to establish, in consultation with MMS, the construction, operation and maintenance standards for the pipeline.

Best regards;

LE Herrick

LE Review of Shell Gulf Landing LNG Application (11/17/03)

CZM/Onshore Issues:

1. Volume II, Section 9.13, Page 9-5 (B. Johnson)

Erroneous statement under Coastal Zone Management Act: "The shore based operations and transit of ships and aircraft from shore support facilities to the terminal site would have "no effects" on coastal resources."

The document further states that "Shore facility operations and ship and aircraft transits are of the same type routinely conducted by offshore operations in the GOM" Although this statement may be accurate, MMS does not conclude "no effect" from routine operations as cited above.

The initial erroneous conclusion in paragraph 1 should be corrected and a proper analysis included.

2. Volume I, Section 2.10, Pages 2-23

Volume I, Section 2.12.5, Page 2-26

Volume I, Section 2.19, Page 2-63 (B. Johnson)

The statements in the application that onshore information "**is unknown**" or cannot be identified are not acceptable or in accordance with the 33 CFR regulations governing Deepwater Ports. Furthermore, if the applicant does not provide the specific onshore location and area of potential impact within a coastal area, then the relevant Federal and State agencies cannot conduct an appropriate environmental review of the project under NEPA, CZMA, ESA, etc.

In order for the applicant to demonstrate that the CZM certification is in accordance with Section 307 of the CZMA (see Section 148.105 (j) coastal zone management; p. 37938 of May 30, 2002 FR) per the 33 CFR Deepwater Port Act regulations, there must be:

a. A detailed description of the overall site plan for all onshore components, including onshore storage areas, pipelines, and refineries (per Section 148.105 (l)(5), p. 37938 of May 30, 2002 FR); and

b. Data on onshore components (1) A description of the location, capacity, and ownership of all planned and existing onshore pipelines, storage facilities, refineries, petrochemical facilities, and transshipment facilities that will be served by the Deepwater Port and (2) A chart showing the location of all planned and existing facilities for the facilities described above. (per Section 148.105(s), p. 37939 of May 30, 2002 FR)

The above information (even if specific alternative locations or information is included in the application) must be provided in order for the applicant to submit

the proper CZM certification and conclusion for each "adjacent" state. It is also required and critical information for any other State to determine if it is an "adjacent" state under this rule (see Section 148.217) to present adequate information to NOAA supporting its position that it is an adjacent state.

Furthermore, at Section 148.279 "What are the criteria and considerations for approval of an application?" this information is specifically required as the "criteria and considerations for approval of an application." The approval of this project would be based on incomplete and deficient information thereby rendering an invalid approval.

3. Volume I, Section 2.10, Pages 2-23 (B. Johnson, C. Pilie')

The application must fully identify the onshore support bases for supplies and sea and air transportation, and pipeline terminals for each adjacent State as well as any construction or expansion of onshore existing facilities. The statements in the application that onshore information "is unknown" or cannot be identified are not acceptable or in accordance with the 33 CFR regulations governing Deepwater Ports.

For each State in which there will be a support facility, a CZM certification statement is required (e.g. Sabine and Galveston, Texas air support facilities proposed in the application (Volume II, page 2-36) require a Texas CZM certification statement from the applicant since the State of Texas is an "adjacent" State. The applicant must therefore certify that all LNG activities comply with the CZM program policies of the State of Texas.

The applicant must provide a CZM certification statement for each "adjacent state" that may have "reasonably foreseeable coastal effects" from the proposed LNG facilities in accordance with the latest NOAA issued CZM regulations governing federally permitted activities (15 CFR 930 Subpart D). A certification statement for only the State of Louisiana was provided.

4. Volume I, 2.20.5, Page 2-65 (C. Pilie')

Per 148.105(t)(5), a description and exact location of shore-based support facilities, if any, for vessels described in paragraph (t)(4) of this section was not provided. A study is planned but has not been completed as indicated by the below text:

"An assessment of the marine support facilities required will be determined in a marine support study to be performed during the detailed design of the facility. It is anticipated that existing marine support infrastructure will be used."

5. Volume II, 2.7, page 2-32 (H. Leedy, C. Pilie', B. Johnson)

A copy of the graving dock survey should be provided. The list of "suitable potential sites capable of supporting the creation of a graving dock and the

construction of the GBS caissons.” is needed to determine potential impacts to coastal habitats and to determine whether additional States require CZM consistency certification.

6. Volume II, 2.7, page 2-35 (C. Pilie’)

Please confirm whether the actual site where the GBS will be built will fall under one of the “2 potential graving dock scenarios evaluated in the ER.” It appears that a number of the “suitable potential sites” do not.

Biology:

1. Volume II, 9.9, page 9-3 (C. Pilie’)

The statement “None of the activities associated with the construction or operation of the Gulf Landing LNG regasification terminal should have any adverse effects on marine mammals in the GOM.” is inconsistent with the statements made on pages 4-80 and 4-81 (shown below), as well as Table 2.12, that state impacts will be adverse but not significant. Please remedy this inconsistency.

1. “During installation, it is expected that there will be adverse but not significant impacts on air quality, water and sediment quality, offshore environments, marine mammals, and sea turtles. “

2. “During routine operations, adverse but not significant impacts are expected to occur to air quality, water and sediment quality, marine mammals, fish resources, and commercial fisheries.”

2. Volume II, 9.7, page 9-3 (C. Pilie’)

It appears that a sentence should be added that states “Consultation with USFWS is also required because there are several species under USFWS jurisdiction that may be affected by the Preferred Alternative.” It appears that at a minimum the brown pelican, bald eagle, and piping plover could be affected. Depending on the site(s) selected as an onshore support base and for construction of the GBS, additional species may be affected.

During Shell’s 7/24/2003 meeting with NOAA Fisheries and USFWS in Baton Rouge, did USFWS indicate a consultation was not required?

3. Volume II, 4.2.2.2.1, page 4-39, first paragraph, 5th sentence (D. Moran)
Change “Economic Exclusion Zone (EEZ)” to “Exclusive Economic Zone”

4. Volume II, 3.2.1.4, page 3-34, paragraph 2, lines 8, 9 and 13 (D. Moran)
Change “rivers” to “river” since the discussion is about the Suwannee River.
Change “river mouths” to “river mouth” since the discussion is about the Suwannee River.

5. Volume II, 3.2.1.4, page 3-34, last paragraph, line 5 (D. Moran)

Delete "and dolphins" (a dolphin is a type of whale)

6. Volume II, 3.2.2.3, page 3-41, paragraph 2, last sentence (D. Moran)
Delete "in turn" from this sentence.

7. Volume II, 3.2.4.2, page 3-47 Table 3.13, (D. Moran)
The correct spelling for WETLAND BIRDS Family Aramidae – "Limkins" is
"Limpkins."

8. Volume II, 3.2.4.2, page 3-48, paragraph 2, last sentence (D. Moran)
This sentence is a statement of fact so "It is believed that" should be deleted as
should the word "may."

9. Volume II, 4.2.2.2.1, page 4-39, first paragraph, last sentence (D. Moran)
What is the anticipated level of discharge from the OCS service and construction
vessels?

10. See separate digital file for comments provided by J. Sinclair.

Socioeconomic:

1. Volume II, Section 3.3.6, Onshore Socioeconomic Conditions and Concerns,
Page 3-69 (V. Zatarain)

Define the socioeconomic impact area – throughout the document the northern GOM, the western GOM, and the central GOM, and the northwest GOM are referenced but there are no maps (or listings) defining where these areas are, what counties/parishes they contain, or where the majority of employment/socioeconomic impacts are expected. (There are maps delineating military warning areas, hypoxia areas, weather buoys and listings of fish habitats, etc. but nothing denoting potential construction sites or labor pool areas.)

The application states that the "fabrication of the majority of the Gulf Landing LNG regasification terminal components will take place in local construction yards throughout the Gulf States." Please identify where the potential construction yards are located and their capacity (since no expansion is anticipated).

2. Volume II, Section 4.2.3.6, Onshore Socioeconomic Conditions and Concerns,
Page 4-63 (V. Zatarain)

It is estimated that about 60 people will be employed to handle the operations of the Gulf Landing LNG regasification deepwater port. However, as with most projects associated with the OCS, the majority of employment and other socioeconomic measures are associated with the design, construction, and installation of the project (the cost for this project nears $\frac{3}{4}$ of a BILLION dollars).

There is no estimate of these impacts for this project (which could be locally significant). Also, how was the 60 operational employees derived?

Under Section 4.2.3.6, direct, indirect, and induced employment should be considered when quantifying socioeconomic impacts.

3. Volume II, Section 4.3.4.6, Onshore Socioeconomic Conditions and Concerns, Page 4-73 and 4-74 (V. Zatarain)

Four categories are listed as potential for socioeconomic losses from major accidents at the Gulf Landing LNG regasification terminal. Please identify/quantify the possible extent of these losses.

4. Volume II, Section 4.4.2.3, Socioeconomic Environment, Page 4-80 (V. Zatarain)

Please define the western Gulf coastal impact area, the central Gulf coastal impact area (see first comment), minimal cumulative impact, and significant cumulative impact (i.e., oil and gas industry employment/population compared to baseline) in regards to the statement: "On a regional level, the cumulative impact from the OCS program on population and employment is minimal for the western Gulf coastal impact area and significant for the central Gulf coastal impact area."

Physical Oceanography/Water Quality:

1. See separate digital file for comments provided by C. Current.

Accidents/Upsets:

1. Volume II, 4.3.2.2.1, Page 4-68 (M. Metcalf)

For spills without ignition, QUEST used its CANARY model to determine distance to LFL. The CANARY model is proprietary and unavailable to MMS. The use of this model should be supported by statement of validation or citation of published peer review articles.

Archaeology:

No comments

Air Quality:

No comments

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#	Location			Comment	Reviewer
	Page	Line	Section		
1	2-12	22	2.3.6.1	The ORV is said to use <u>up to</u> 126,816,000 gallons/day of seawater to vaporize LNG. This implies a maximum thermal water discharge of less than 127MGD, and does not seem to agree with numbers given in 4.2.1.2.2 and in App. D, Form 2D.	CC
2	4-22	31	4.2.1.2.2	<u>Approximately</u> 127 MGD are used (no mention of this being a maximum). This does not seem to agree with similar numbers in 2.3.6.1 and in App. D, Form 2D.	CC
3	1	N/A	Application App. D, Form2D	EPA NPDES application for permit to discharge process wastewater. It is stated that the average ORV thermal water discharge is 136 MGD. This does not seem to agree with similar numbers in 2.3.6.1 and 4.2.1.2.2.	CC
4.	2-12	28-33	2.3.6.1	When discussing the potential impact of ORV use, and the modeling that was done, please discuss briefly the suitability of the CORMIX1 model for modeling cold plumes and why a model specifically intended for cold plumes was not employed.	CC

CC -- Carole L. Current, Ph.D., Physical Oceanographer

#	Location			Comment	Reviewer
	Page	Line	Section		
1	3-28		3.2.1.1.4 Endangered and Threatened Fish Species	This section should include treatment of the Gulf Sturgeon or this info should be moved to section 3.2.1.4 and the title changed to "Endangered and Threatened Fish Species".	JES
2	4-80		4.4.2.2.6	"Pelagic Communities" is missing. Should be section 6 in cumulative impacts to the biological community. Need to add this section between "Benthic Communities" and "Coastal Habitats".	JES
3	2-12		2.3.6.1 ORVs	What is the concentration of sodium hypochlorite injected at the intake and expected at the outfall?	JES
4	3-30 and 3-31		3.2.1.3 Essential Fish Habitat (EFH)	This section should include the blue crab, <i>Calinectes sapidus</i> , as an important commercial species with EFH in the affected environment. The zoea larvae spend up to 7 weeks in the marine environment of the shelf.	JES
5	4-32		4.2.2.1.2 Operations	Should include brief discussion of control of invasive species and any biocides in ballast water.	JES
6	4-35		4.2.2.1.2 Operations	Discuss the impact of sodium hypochlorite in cold water discharge on fish and fishery resources: at the outfall and remote from the outfall.	JES
7	4-51		4.2.2.5.2 Operations	Discuss the impact of sodium hypochlorite in cold water discharge on benthic communities: at the outfall and remote from the outfall.	JES
8	4-54		4.2.2.6.2 Operations	Discuss the impact of sodium hypochlorite in cold water discharge on pelagic communities: at the outfall and remote from the outfall.	JES

JES—James E. Sinclair, Marine Biologist, MMS, Gulf of Mexico Region-LE, (504) 736-2789, James.Sinclair@mms.gov, 14 November 2003.

**Engineering and Operations Division
Completeness Review – Gulf Landing Deepwater Port Application
November 17, 2003**

Volume I

1. Page 2-52 – Send-Out Gas Transportation and Metering

Applicant should provide a detailed discussion of the five pipelines that they will inject gas into, including MAOP, pipeline design capacities, current throughput, existing excess capacities, and anticipated injection volumes. This should be followed by an analysis that reviews the impact of regasified LNG on production development in the areas served by the five pipelines to be used by the port.

2. Page 2-60/61 – Description and Design Drawing of Marine Pipelines

Please indicate when and how commingling agreements will be processed. Also note that the statement "...the commingling issue will be addressed through these MMS reviews, which will be initiated separate and apart from this license application" is incorrect, with commingling agreements, meter design, and unannounced inspections being integral conditions of approval to port licensing and operation.

Volume II

1. Executive Summary - ES-19 – Environmental Consequences

- a. Section fails to address safety impacts due to increased LNG tanker, tugs, and support vessels, in and near the vicinity of the port and fixed OCS facilities.
- b. Section fails to address impacts to pipeline infrastructure.
- c. Section fails to review impacts to oil and gas exploration, development, and production activities on the block where the port is to be located as well as associated safety zones, anchorage areas, precautionary notice areas, and recommended vessel routes.
- d. Section fails to speak to cumulative impacts from all deepwater ports.

2. Section 4.4.1.3 – Marine Shipping Activities

See comments on Executive Summary above.

Volume III

1. Section N – Page 14 of 49 – Simultaneous Operations

Application addresses a 500-meter exclusion zone and a five kilometer restricted zone, with the later requiring that "all craft must seek permission from the facility to enter." Note that the restricted zone extends into a leased block in which no vessel restriction would apply creating a safety hazard for the port. This should be discussed in more detail. Establishment of anchorage areas where pipelines are extant should also be thoroughly discussed in the context of impact avoidance.

2. Section O – Page 18 – Pilotage, Navigation, Towage and Mooring Services

Section discusses use of tugs for mooring purposes but does not indicate if they will be used for escort purposes once the LNG tanker leaves the designated safety fairway. With the port in close proximity to platforms, loss of power by a tanker, such as the case of the Stevanger Prince in 1997, without the aid of tugs could lead to drifting impact to existing oil and gas production facilities. As other deepwater port applicants have determined that safety risks warrant the use of escort vessels and the use of dedicated port Captains, it is unclear how Gulf Landing could take a contrarian view of the requirement and argue that risks would not be increased.

**Gulf Landing LNG Project
Branch of Environmental Assessment Comments**

Air Quality

- Page 3-14, Section 3.1.3: To give the reader a better understanding of EPA's requirements, the environment report should reference the air permit application found in the appendix.
- Page 4-1, Section 4.2.1.1.1, Construction (Air Quality): Analysis is missing associated with the impacts due to construction of the GBS terminal if this were to take place at one of the Gulf facilities. Construction of the proposed GBS facility is a sizable project and there could be air permit considerations especially if it were to be constructed at a facility located in a non-attainment area.

Archaeology

- Page 3-66, Section 3.3.4.1.2: If there is to be any bottom-disturbing activity in West Cameron Block 183 (Alternative B), an archaeological survey will need to be conducted. The results of the 1990 survey of Block 182 cannot be used to assess the archaeological potential of Block 183.
- Page 3-66, Section 3.3.4.2.1, first paragraph: The proposed 200' distance for avoidance of the three possibly significant magnetic anomalies recorded in Block 213 is inadequate. These unidentified anomalies should either be avoided by a minimum distance of 500' or investigated to determine their historic significance.
- Page 3-67, Section 3.3.4.2.2: If there is to be any bottom-disturbing activity in West Cameron Block 183 (Alternative B), an archaeological survey will need to be conducted. The results of the 1990 survey of Block 182 cannot be used to assess the archaeological potential of Block 183.
- Page 3-67, Section 3.3.4.2.3: The proposed 100' distance for avoidance of the unidentified side scan sonar target and two associated magnetic anomalies is inadequate. This unidentified object at the seafloor should either be avoided by a minimum distance of 500' or investigated to determine its historic significance.
- Page 4-61, Section 4.2.3.4, first paragraph, fourth sentence: This sentence is very confusing. It states, "Due to the amplitude and duration of four of these magnetic anomalies, these three locations were marked for avoidance ...". Are two of the anomalies assumed to be from the same source? This needs to be clarified.
- Page 4-61, Section 4.2.3.4, second paragraph: The information given in this paragraph regarding what was recorded along the proposed pipeline routes and the strategy and criteria for avoidance of potential archaeological resources is totally inadequate.

- Page 4-62, Section 4.2.3.4.1, Alternative B: The 1990 archaeological survey conducted on West Cameron Block 182 cannot be used to assess the archaeological potential of Block 183.

Oil and Gas Exploration and Production

- Page 3-64, 3.3.2: This section is inadequate. It is too general and does not describe the area, in terms of OCS oil and gas activities, that will be affected by the Gulf Landing Project.
- Page 4-59-60, 4.2.3.2.2: This section is inadequate. The impact analysis does not evaluate Gulf Landing's operational impacts (e.g., LNG tanker and support vessel traffic) on existing OCS activities located nearby.

Socioeconomic Environment

The environmental report is missing a description for the onshore fabrication facility upon which an analysis is made. A scenario should be developed. For example: The facility will most likely be built in or around Morgan City LA or surrounding counties. Socioeconomic sections should describe the environment (chapter 3). This should be done using county statistics such as:

- demographic data
- employment
- income

Chapter 4 should quantitatively analyze impacts in terms of jobs, income and in-migration, at minimum. Any other analysis, for example EJ, can be done within the same geographic area (county or counties) to identify low-income/minority populations as discuss below, then determine if there is a disproportionate impact.

- Page 3-69, 3.3.6 Onshore Socioeconomic Conditions and Concerns: This description should describe onshore human communities to a certain extent. We suggest using county level data to describe employment, for example, with particular attention to the oil and gas sector. The counties selected for analysis should be consistent with the affected area analyzed in the remainder of this document.
- Page 4-63, 4.2.3.6 Onshore Socioeconomic Conditions and Concerns: A scenario should be constructed to analyze the potential effects of the construction/fabrication phase of the facility. If no new employment will be needed, the facility will still serve to maintain the *status quo* in terms of employment and income (this should be stated, if in fact, this is the case). However, page 2-83 (Table 2-12) states that "Construction of the GBS and associated onshore components will create construction jobs in the communities selected for the construction activities." This statement contradicts page 4-63. Moreover, construction will affect certain geographic areas (human communities) more than others. Fabrication yards that are large enough to handle construction of this type of facility are few (i.e. Morgan City, New Iberia- LA). A scenario should be developed to assess relative onshore socioeconomic effects.
- Page 4-73, 4.3.4.6 Onshore Socioeconomic Conditions and Concerns: This section is a recap of section 4.3.4 Impact on the Socioeconomic Environment. This is inconsistent with the previous sections on onshore socioeconomics where no summary is given but an independent analysis is attempted.

- Page 4-80: There is no analysis to support the conclusion drawn in section 4.4.2.3 Socioeconomic Environment.
- Page 5-1, 5.0 Environmental Justice: This section is inadequate. The first step in an EJ analysis is to identify low income/minority populations. Next determine if there is a disproportionate effect on these populations (if indeed they exist) and third consult with them and offer mitigation. This analysis begins to conduct step 1, then simply suggest that there are no disproportionate effects. As written, there is no logical flow. For example, how can it be suggested that there are no effects if the environmental report does not first identify who can be potentially affected? The approach suggests an affected area of most of the entire Gulf region, indeed, a wide area of analysis. We suggest using a scenario approach to identify both a geographic area and any low income/minority populations. After identification, the analysis must determine if these populations will be disproportionately impacted.
- Page 9-7, 9-22, paragraph 3: This paragraph discusses the lack of impacts to subsistence. However, there is no analysis of subsistence in the entire environmental report, in turn making it impossible to suggest that there would no impact to subsistence activities.